

Section 9

Financial Program

This section describes the estimated cost of operating Seattle Public Utilities' (SPU) water system and investing in the capital projects described in Section 8, as well as the likely methods of financing these activities.

9.1 Financial Model Cash Flows

The capital improvements summarized in Section 8 together with projected operating expenses over the next 20 years were incorporated into the water system's financial model in order to develop a long-term picture of rate requirements and financial performance over the next 20 years. The anticipated cash flows and financial performance generated by the financial model are summarized at 5-year intervals in Table 9-1.

Table 9-1 Summary of Water System Cash Flows and Financial Results (in Millions of nominal dollars*)					
	2000	2005	2010	2015	2020
Revenues					
Water Sales	\$ 104	\$ 152	\$ 172	\$ 195	\$ 217
Other	1	1	2	2	2
Total: \$	105	153	174	197	219
Expenditures					
Operations and Maintenance	\$ 42	\$ 58	\$ 65	\$ 73	\$ 82
Taxes	11	15	18	21	23
Debt Service	45	61	69	78	85
Equipment	2	2	2	2	2
Revenue-Financed Construction	1	15	20	24	27
Total: \$	101	151	174	198	219
Net of Revenues and Expenditures:**	\$ 4	\$ 2	\$ 0	\$ (1)	\$ 0
Debt Service Coverage	1.54	1.70	1.70	1.70	1.70
Debt-to-Assets Ratio	0.70	0.74	0.74	0.69	0.60
Cash Balance	\$ 10	\$ 7	\$ 9	\$ 10	\$ 11
Capital Facilities Program					
	2001-2005	2006-2010	2011-2015	2016-2020	
Revenue Financing	\$ 63	\$ 91	\$ 112	\$ 127	
Contributions in Aid of Construction	23	25	27	28	
Debt Financing	356	167	111	112	
Total:	\$ 442	\$ 283	\$ 250	\$ 267	

* Actual dollars spent or received in any given year; revenues and expenditures are inflated to off-set the erosion of purchasing power over time due to inflation.

** Revenues and expenditures do not net zero in this summary because of rounding errors, contributions to cash balances, and lags between when revenues are billed and when they are received.

Operating expenses over the 20-year period will grow faster than the rate of inflation because of the Cedar River Watershed Habitat Conservation Plan (HCP), and the addition of treatment facilities on the Cedar and Tolt sources. In addition, this financial analysis assumes that SPU will participate in the Second Supply Pipeline project. Debt service expenses will also grow at a rate that exceeds the rate of inflation because of the issuance of new debt required to fund the capital program. The increases in operating and debt expenses have to be paid with rate revenue, so rate increases over the 20-year period are expected to exceed the rate of inflation.

The rate of growth in cash expenditures is highest in the first five years of the plan. During this period the new Tolt and Cedar treatment facilities become operational, the HCP is implemented and capital expenditures are at their peak. The high rates of spending in the early years of the plan result in a need for a rapid rise in rates in the 2001-2005 period. To moderate the growth in rates in the early years, consideration was given to deferring some capital improvements or to reducing financial performance below target levels.

There is some expected reduction of financial performance in the 2001-2004 period, with a return to targeted financial performance in 2005. The reduction in financial margins in the first 5 years of the plan moderates the need for an increase in rates, but leaves the water system with a relatively high ratio of debt-to-assets for all but the last 5 years of the plan.

As in any plan, specific programs, studies, capital projects, and other implementing actions will require additional decisions involving annual budgets, capital improvement programs, agreements, and operating procedures.

9.2 The Cost of Implementing Recommended Programs

Water system costs are separated into two categories:

- **Operations and Maintenance (O&M) Costs** – O&M costs are the costs of operating and maintaining existing equipment and facilities. These include costs such as treatment chemicals, maintenance activities, and operation of the water system. O&M costs are paid with water sales revenues.
- **Capital Facilities Plan (CFP) Costs** – CFP costs are the costs of constructing new water facilities or replacing old facilities. These costs include building treatment plants and replacing pipelines. CFP costs are generally eligible for debt financing.

In addition to the capital costs shown in the CFP, each year the water system purchases \$2-3 million in miscellaneous, short-lived equipment

such as computers and office equipment. This equipment is included in the operating budget (not the CFP) and purchased with water sales revenues. Purchases of this miscellaneous equipment are expected to continue at \$2-3 million per year, and are not further discussed in this section.

9.2.1 Operations and Maintenance Costs

O&M is the day-to-day cost of delivering water and operating existing facilities. Operating activities are divided into seven functional areas, which are based on SPU's organizational structure (Exhibit 6-1). These are:

- Director's Office – Provides overall management, policy, and strategic direction. Includes communications activities.
- Finance and Administration – Operates technology infrastructure and provides budget, accounting, rates, human resources, property management, and contracting support.
- Customer Service – Provides water customers with one-stop water system services. Reads and maintains meters. Bills customers and administers customer accounts.
- Engineering Services – Provides project design, project management, construction management, and other engineering services.
- Resource Management – Plans and develops programs and capital improvement projects that improve water quality, water supply, and habitat. Manages the watersheds and the water resource. Treats water and monitors water quality. Manages conservation programs.
- Field Operations – Operates and maintains the existing water system infrastructure.
- General Expense – SPU's share of Seattle city government central costs, such as citywide personnel services and the Central Budget Office.

The distribution of O&M costs among these activities is shown in Exhibit 9-1.

Annual O&M costs are expected to increase from \$41.6 million in 2000 to a peak of \$52.1 million in 2006 before declining to \$50.0 million in 2020 (2000 dollars). This is an increase of 20 percent over the 20-year period in real terms. The pattern of O&M costs is shown in Exhibit 9-2.

Exhibit 9-1
Use of Operation and Maintenance Funds in 1999

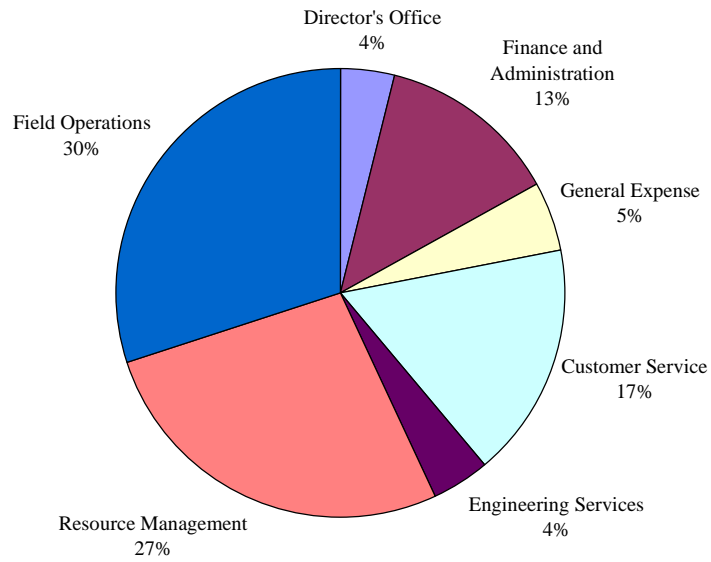
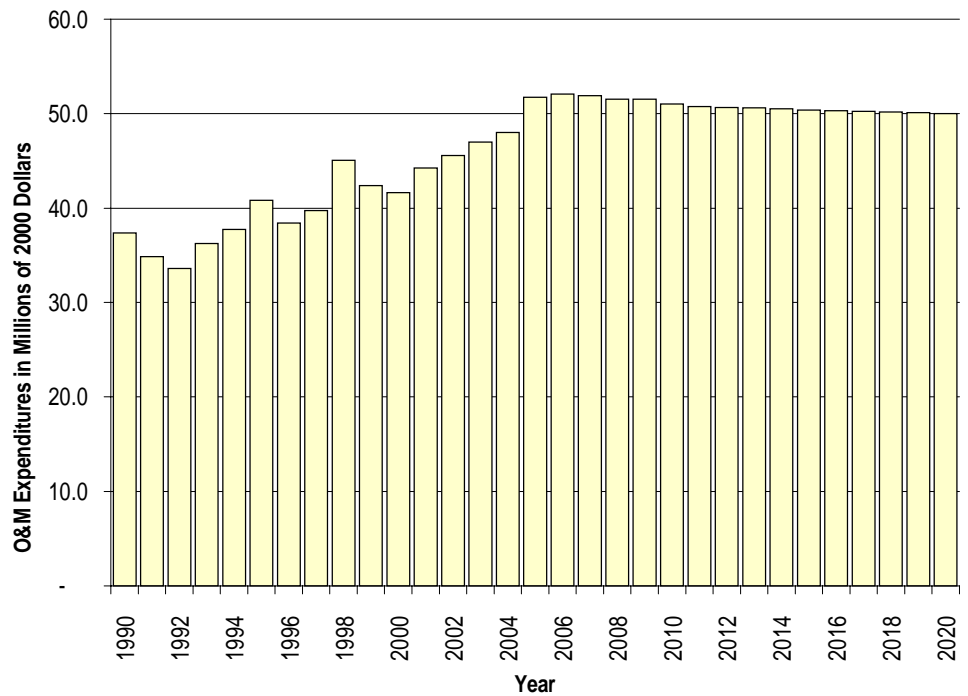


Exhibit 9-2
Past vs. Recommended O&M Expenditures



The vast majority of these cost increases are due to operating three new facilities:

Most of the O&M cost increases result from three projects: Tolt Treatment Facility, Cedar Treatment Facility, and Second Supply Project.

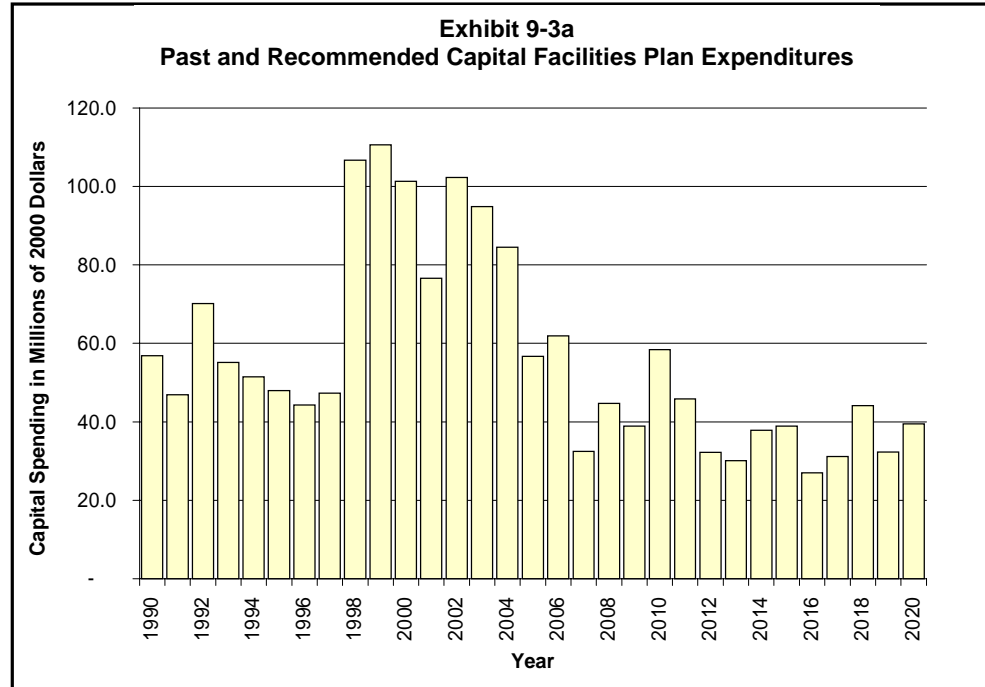
- Tolt Treatment Facility – This facility is being constructed to provide public health protection and to meet future water quality standards for surface water supplies. As a side benefit, it will allow the Tolt Reservoir to be drawn down below current operating levels, thereby increasing the water system’s firm yield by 11 million gallons of water per day (MGD). Annual operating costs are expected to be about \$2.4 million (2000 dollars), beginning in 2001.
- Cedar Treatment Facility - Like the Tolt Treatment Facility, the Cedar Treatment Facility is being constructed to provide public health protection and meet future federal water quality standards for surface water supplies. Annual operating costs are expected to be about \$3.2 million (2000 dollars), beginning in 2005.
- Second Supply Project – The Second Supply Project would provide a new source of water from the Tacoma system. SPU’s share of the cost of operating the project (i.e., construction costs) would be about \$1.0 million per year (2000 dollars), starting in 2006. SPU’s payments to Tacoma for Seattle’s share of the debt service cost of the project would rise from \$0.8 million in 2001 to \$4.0 million in 2006 (2000 dollars). These payments (which are treated as an O&M expense) would decrease after 2006 to reflect the declining real value of debt service on the Second Supply Project paid to Tacoma.

Other minor changes to O&M costs include the costs of operating and maintaining new reservoir covers within the retail distribution system.

9.2.2 Capital Facilities Plan Costs

During the next five years, SPU plans investments in the water system averaging \$83 million each year to replace aging facilities and construct new facilities to meet federal and State regulatory requirements. Infrastructure related to regulatory requirements represents 34% of spending from 2001-2005, or about \$28 million per year. Capital spending would fall to an average of \$40 million per year after the regulatory requirements are met in 2005. This pattern of projected CFP expenditures is shown in Exhibit 9-3.

These expenditures are categorized into five program areas in the water system’s CFP. A full description of the projected 2001-2025 CFP is included in Section 8. Table 9-2 summarizes the major elements of the 2001-2025 projected CFP.



SPU has a billion dollar Water System CFP over the next 20 years.

	2001-2005	2006-2010	2011-2015	2016-2020	Total
Water Infrastructure	176.5	169.9	154.5	143.1	644.0
Water Quality	133.8	13.3	11.1	12.4	170.6
Water Supply and Conservation	65.2	26.0	3.8	2.6	97.6
Other Agency Projects	9.7	4.9	3.3	3.3	21.2
Technology	28.9	22.5	12.4	12.9	76.7
Total	414.1	236.6	185.1	174.3	1,010.1

9.3 Financial Policies

Financial management of the water system is directed by formal financial policies adopted by the City Council and by informal guidelines that have evolved over time in response to specific issues. These policies and guidelines are used to decide how to finance water system operations and Capital projects. They are intended to ensure that the water system finances its costs in such a manner that specific policy goals are achieved. These goals are:

- To ensure the financial integrity of the water system;

- Moderate rate increases for water system customers over the near and medium term; and,
- To ensure an equitable allocation of capital costs between current and future ratepayers.

The water system's financial policies and guidelines are:

1. Rates should be set to achieve a target debt service coverage ratio (DSC) of at least 1.70. A debt service coverage ratio is the relationship between revenue available for annual debt service payments to total annual debt service obligations.
2. Rates should be set to achieve positive net income in each calendar year.
3. No more than 85 percent of the CIP should be funded from debt in any single year and no more than 80 percent of the CIP should be funded from debt during any six-year period.
4. The operating fund should finish each year with a positive cash balance and with an approximately zero monthly balance averaged throughout the year.
5. The ratio of outstanding debt to total assets should not exceed 70 percent.

The first two guidelines were adopted by resolution of the City Council in 1990. The third guideline was developed by SPU to put some constraints on the amount of debt financing. The fourth guideline was an explicit part of the rate proposal approved by the City Council. The last guideline was the result of analysis conducted during the preparation of the 1993 Water Supply Plan. It has not been reviewed by the City Council. Rather, it is an internal guideline suggested by the City's financial advisor based on feedback received from rating agencies.

The financial policies help determine how much revenue the utility must collect from its customers each year to meet the cost of operations, maintenance and repair, and capital improvements. Because of this, rate impacts stemming from specific courses of action recommended in the Water System Plan cannot be determined without also considering what financial policies are to be followed. If an action's rate impacts are unacceptable, the action can be scaled back to reduce costs, or alternative financial approaches can be considered to spread costs over a longer period.

9.4 Financial Issues

Organizations are considered financially healthy when they retain the flexibility to respond to unexpected circumstances. Such circumstances may include new, unexpected but essential tasks; or a shortfall in earnings.

Financing new and replacement infrastructure has helped to keep rates low.

Flexibility can mean redirecting expenditures, borrowing money to meet an unexpected need, or other approaches.

In the last decade, the water system has financed a significant amount of new and replacement infrastructure through the use of debt. Debt financing has helped to keep rates low, but it has also greatly increased the amount of each dollar of revenue that is used to pay off the debt. In 1990, 20 cents of every revenue dollar was used to repay loans. By 2005, 40 cents of every revenue dollar will be used to repay loans.

Increased reliance on debt poses challenges to SPU in two ways. First, more of every revenue dollar is required for the essential task of repaying loans. This means that SPU has less flexibility in how it spends its revenues. Second, the increasing share of revenue being used for debt service shows that SPU is investing less current revenue in its new infrastructure. Current revenues that are used for new facilities are the most flexible resource for meeting unexpected needs.

There are two key indicators used by the financial community that provide a measure of how well SPU is doing in the areas identified above. The first, debt-service coverage, is an annual measure of the revenue an organization has available to repay debt, divided by debt payments. It is calculated after operations expenses and some taxes have been paid. The “excess” revenue available after debt payments are made is generally invested in the capital program. This revenue financing is the most flexible source of funds for responding to unanticipated needs or revenue shortfalls. SPU’s debt-service coverage policy target is 1.70. Because of the unprecedented size of the capital program and reliance on debt, the water system debt-service coverage is expected to be below this target until at least 2003.

The second key indicator is the debt-to-assets ratio. The debt-to-assets ratio is the outstanding debt of the organization divided by the sum total of its assets. It shows how reliant the organization is on debt to finance its infrastructure. In the early 1990s, Seattle’s financial advisor suggested that the financial community would be concerned if the water system’s debt-to-assets ratio exceeded 0.7. The debt-to-assets ratio is currently at this level, and will increase slightly in the near-term.

The alternative to increasing the debt-to-assets ratio is higher rates. Higher rates could provide more current revenue for new infrastructure. By investing more current revenue in infrastructure, SPU could reduce its reliance on debt, and thereby reduce its debt-to-assets ratio. Because of the unprecedented size of the current capital program, maintaining a debt-to-assets ratio of 0.7 would require rate increases substantially higher than the increases already planned.

The increasing commitment of each revenue dollar to pay off debt makes sources of financial instability more important because SPU has less flexibility to adjust to revenue shortfalls and unexpected needs. One cause of revenue fluctuation for SPU is seasonal rates, which are used to discourage water use in the summer when water is most scarce and therefore most expensive to provide. Variations in summer weather can cause annual water use to vary from an “average” year by 2 to 3 percent. Since this variation happens in the summer when rates are high, it can result in revenue shortfalls of 3 to 4 percent.

Reducing this weather-related revenue risk could be accomplished through setting rates to raise more annual revenue (an “additional” rate increase) or reducing the difference between winter and summer rates. Higher annual revenues would provide a “cushion” against revenue shortfalls. These “additional” revenues could also be used to fund a Rate Stabilization Fund to be used to offset revenue shortfalls. This approach requires higher rate increases in the near term to develop the revenue “cushion” or Rate Stabilization Fund.

Reducing the difference between summer and winter rates lowers revenue risk without increasing annual revenues (no “additional” rate increase). Under this approach, the water system would receive more revenue during winter months when revenues are stable, less revenue during the summer when demand varies. However, changing the seasonal rate structure in this way would lower summer water rates and thereby reduce incentives to conserve water in the summer, when it is most expensive to supply. In late 1999, the water system reduced revenue risk by narrowing the difference between winter and summer rates. This action reduced the size of the potential revenue impact caused by poor summer water sales.

9.5 Financing Capital Investments

SPU plans to construct the planned new facilities while increasing operating revenues at a rate of about eight percent per year from 2001-2005. Because of the large size of the CFP, financing will rely heavily on borrowing. This strategy helps moderate the near-term increase in water rates, but it reduces future flexibility to respond to unexpected events. It also exposes SPU to the possibility of higher interest rates if investors view SPU as overextended.

9.5.1 Sources of Funding

Water system revenues are generated by the sale of water as well as related service charges. In 1998, water sales made up 98 percent of operating revenues, and service charges made up the remaining 2 percent. In addition, a small portion of the capital program is paid through contributions in aid of construction. These contributions are reimbursements for installation of water services and other infrastructure.

*Water sales
made up 98% of
revenues in
1998.*

Because almost all water system revenues come from water rates, water rates must be increased if water system costs increase.

9.5.2 Rates

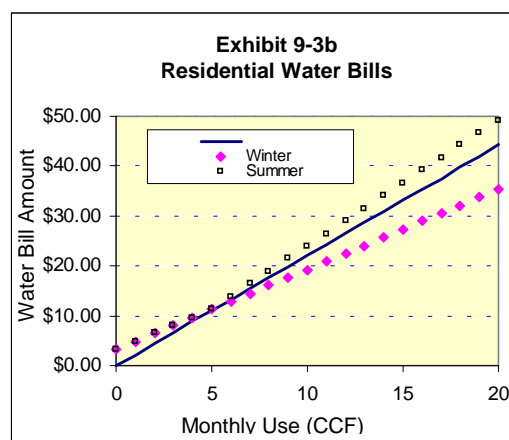
Rates are set to provide sufficient revenue to operate the water system. Rate setting objectives include:

- Revenue stability and sufficiency
- Economic efficiency
- Customer equity
- Promotion of conservation
- Customer understanding

Rates are expected to increase from \$1.54 per ccf in 2001 to \$2.10 per ccf in 2010.

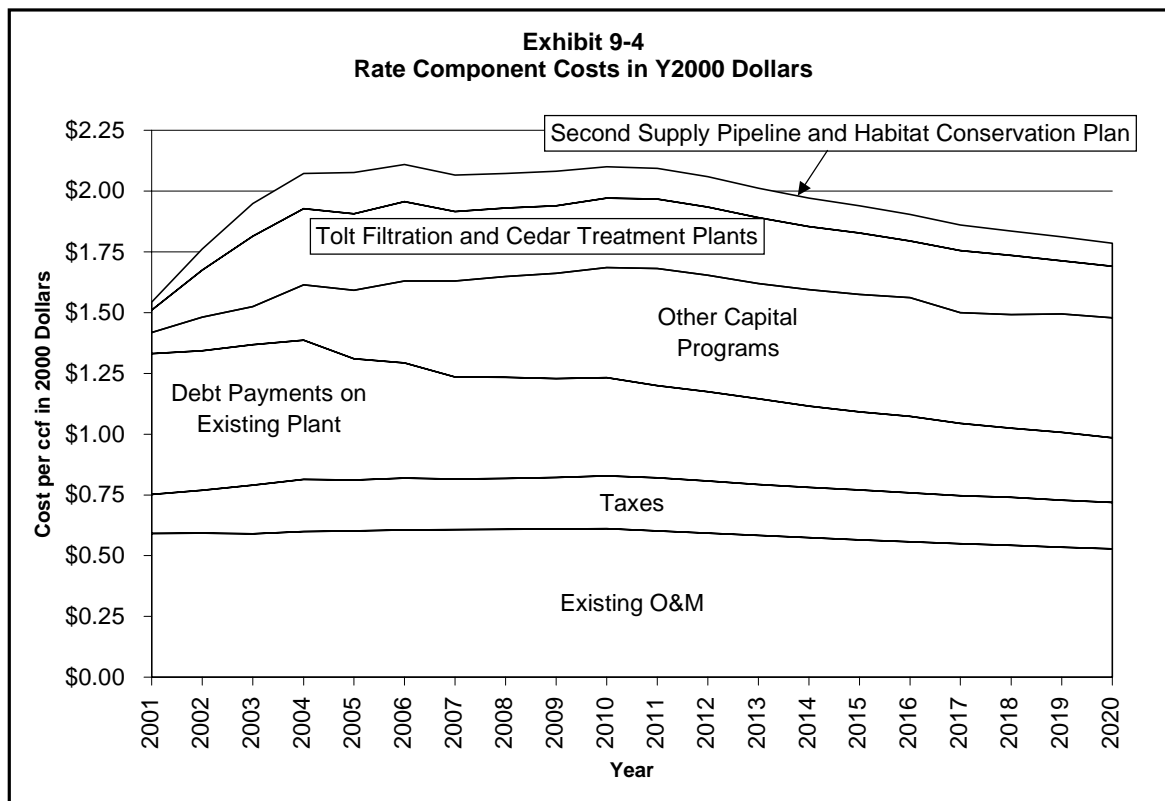
Rates are set by customer class. The major customer groupings are wholesale and retail. Retail customers are further categorized into residential and commercial classes. The rate structure for each of the customer classes includes a fixed monthly charge (graduated by the size of the service) and a seasonally differentiated commodity (or volume) charge. The combination of fixed and commodity-related charges can be fine tuned to meet the rate objectives identified above. For example, the fixed charge can be set to recover costs (i.e. billing and meter reading) which are unrelated to the amount of water used. Similarly, seasonal commodity rates can be set to reflect the cost differentials that exist between winter (when stream flows are high and demand is low) and summer (when stream flows are low and demand is high). Setting rates so that the bills of individual customers reflect the cost of serving them is especially important in achieving customer equity because the most commonly used definition of equity is that bills reflect costs.

To encourage conservation in the summer period, the residential commodity rate is structured with two blocks with usage greater than five hundred cubic feet (5 CCF) billed a higher rate than usage less than 5 CCF. The winter commodity rate is just a single rate. This rate structure coupled with the relatively low fixed monthly charge produces the bill pattern shown in Exhibit 9-3b.



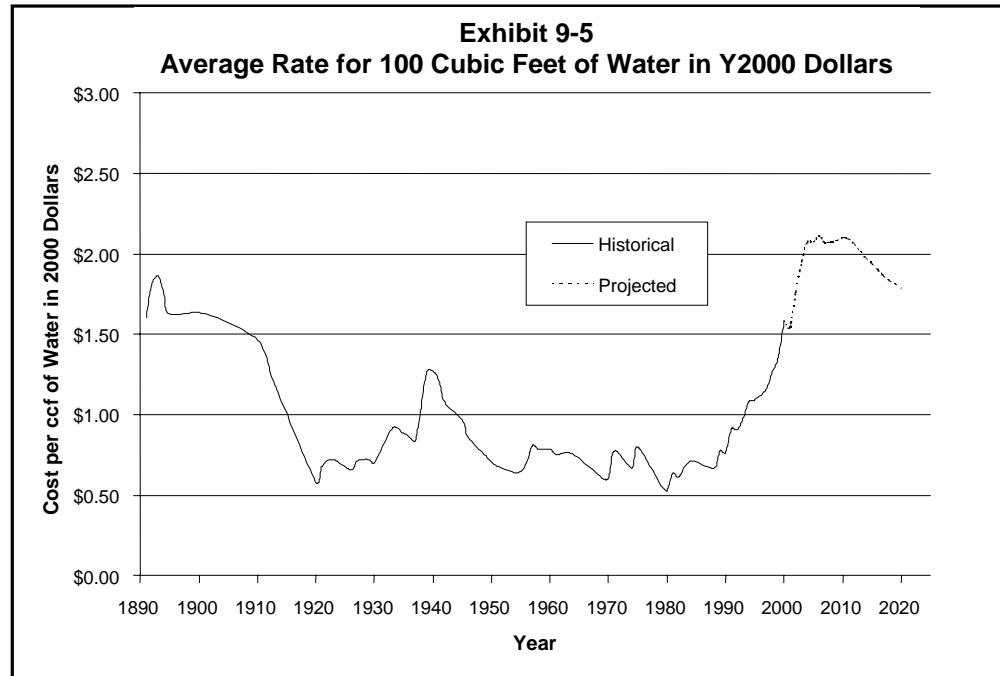
System-wide rates have been increasing faster than the rate of inflation for the past five years and this trend will continue for at least another five years. SPU uses the system-wide average cost of supplying one hundred cubic feet of water in order to compare water rates over time. This measure is used because there is no actual rate that reflects the cost of water to customers as a whole.

Exhibit 9-4 shows that a significant portion of rate increases would be due to facilities required by State and federal regulations, such as the HCP, the Tolt Treatment Facility, and Cedar Treatment Facility. The development of the Second Supply Project is another significant contributing factor. For each of these facilities, Exhibit 9-4 includes the operations and maintenance, revenue financing, and debt service costs.



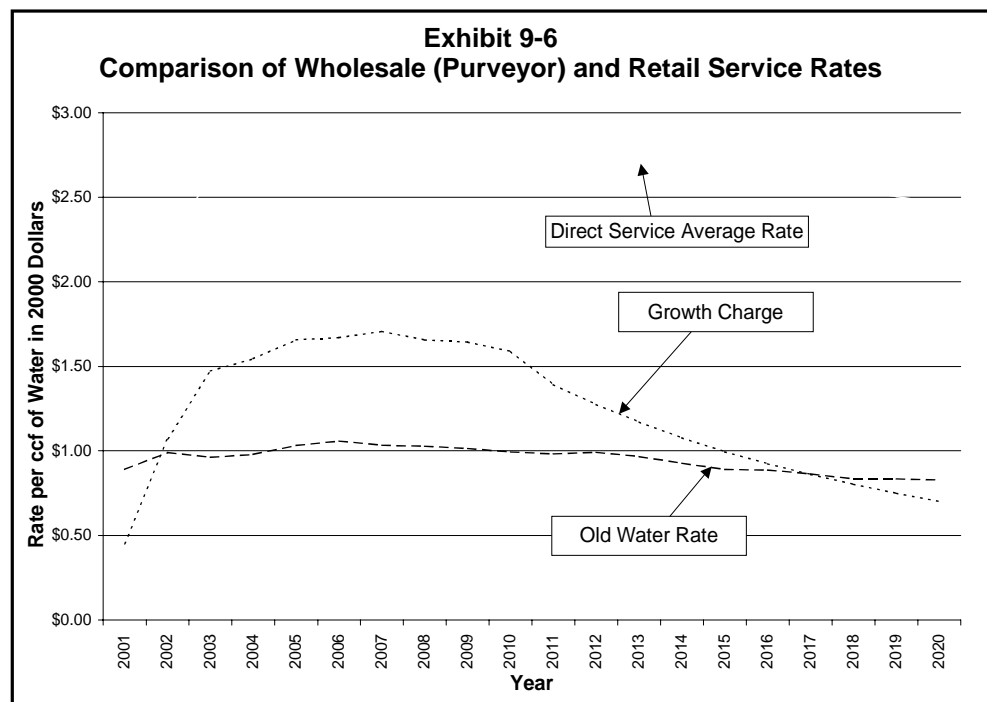
Given anticipated future financial commitments, the system-wide average rate is expected to increase in real terms from \$1.54 per hundred cubic feet (ccf) of water in 2001 to a peak of \$2.10 per ccf in 2010 (2000 dollars). This rate path, and the costs that drive the total rate, is shown in Exhibit 9-4.

Due to those improvements to the system, rates would be comparable to a level that existed when the system was originally constructed as shown in Exhibit 9-5.



Future rate levels depend on both the cost of providing water and the amount of water sold. Since demand for water over the next twenty years is relatively flat (Section 2), there is virtually no growth in water sales to absorb higher costs.

While rate forecasting is generally done for the system as a whole, there is a categorical difference between the rates paid by purveyors and the rates paid by direct service customers (Exhibit 9-6)

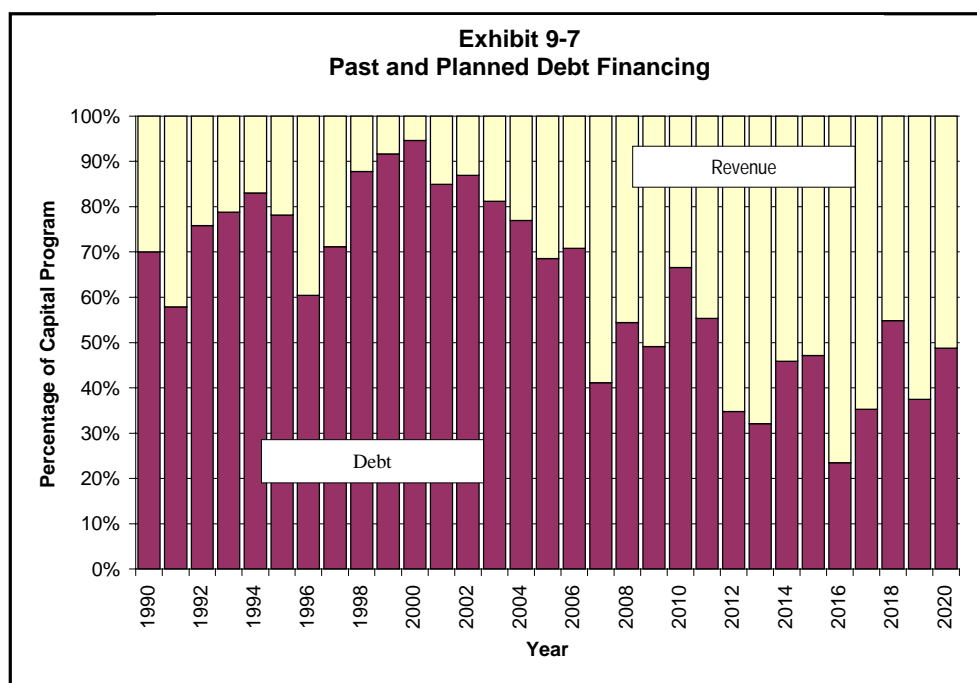


Purveyors only pay their share of water supply, treatment, and distribution.

Purveyors are wholesale customers who re-sell the water they purchase from the water system to their residential and commercial customers through a distribution system that they own, operate and maintain. Retail customers are served by SPU's distribution network. Purveyors do not pay for SPU's distribution network, since they are not served by the distribution network. They pay only for their share of water supply, treatment, and transmission. The rates charged by purveyors to *their* customers include the cost of the purveyor distribution systems. Purveyors pay a set rate for a base water allowance ("Old Water") and a surcharge for consumption above that allowance ("Growth Charge").

9.5.3 Use of Debt Financing

Debt financing is expected to be used extensively to finance the capital program.¹ Over the 20-year period 2001-2020, debt is expected to be used to finance sixty-two percent of the CFP, more extensively in the next several years and less extensively in the long-term, as shown in Exhibit 9-7.



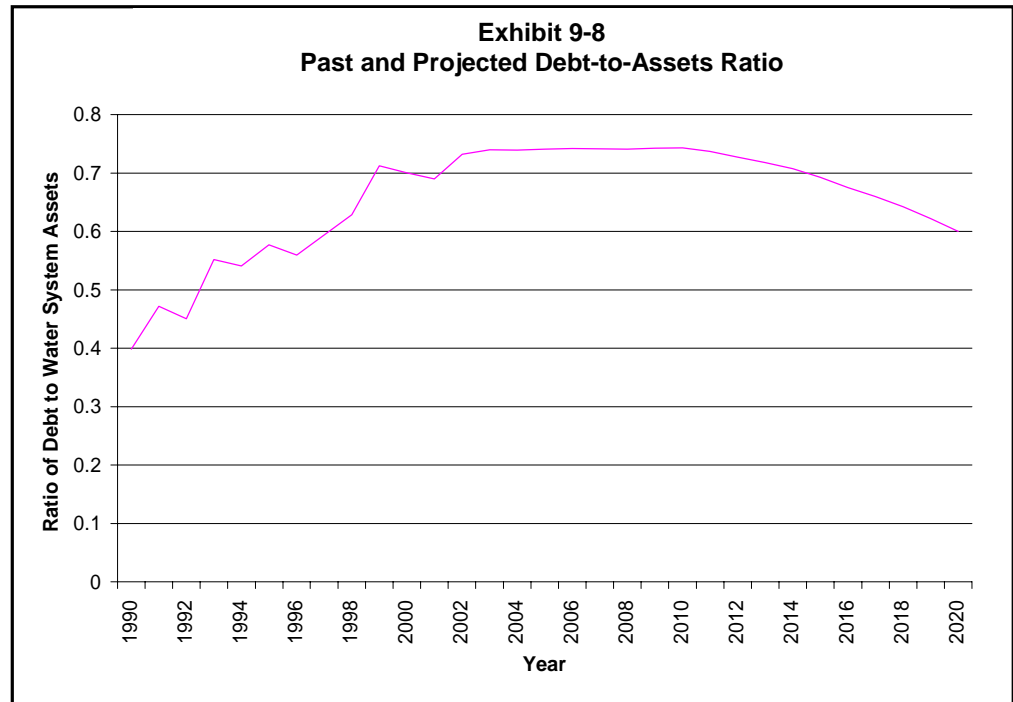
Debt is expected to be used to finance eighty-one percent of the CFP from 2001-2005, compared to forty-nine percent thereafter. The year-to-year variation in the use of debt will be caused by variation in the size of the capital program. In years where the capital program is small, available revenue makes up a larger percentage of the capital spending. When the capital program is large, debt would be relied upon more heavily.

¹ In November 1999, Washington voters approved Initiative 695. This initiative may restrict the water system's ability to borrow money. The financing plan assumes that I-695 does not restrict access to financial markets.

9.5.4 Debt-to-Assets Ratio

The debt-to-assets ratio will peak at 74% in 2010.

SPU has been borrowing and is expected to continue to borrow extensively in order to finance the capital program while keeping water rates low. This extensive use of debt means that the water system's debt-to-assets ratio has risen about thirty percent over the last 10 years, and would peak at seventy-four percent in 2010 (Exhibit 9-8).



It is important to note that the debt-to-assets ratios shown in Exhibit 9-8 do not include debt used to finance the Second Supply Project, since it would be financed directly by Tacoma. SPU would pay its share of debt service payments to Tacoma as a portion of overall operations payments. Investors, however, may view the debt associated with the project as a liability of the water system and use it to increase the water system's debt-to-assets ratio when they consider lending to the water system.

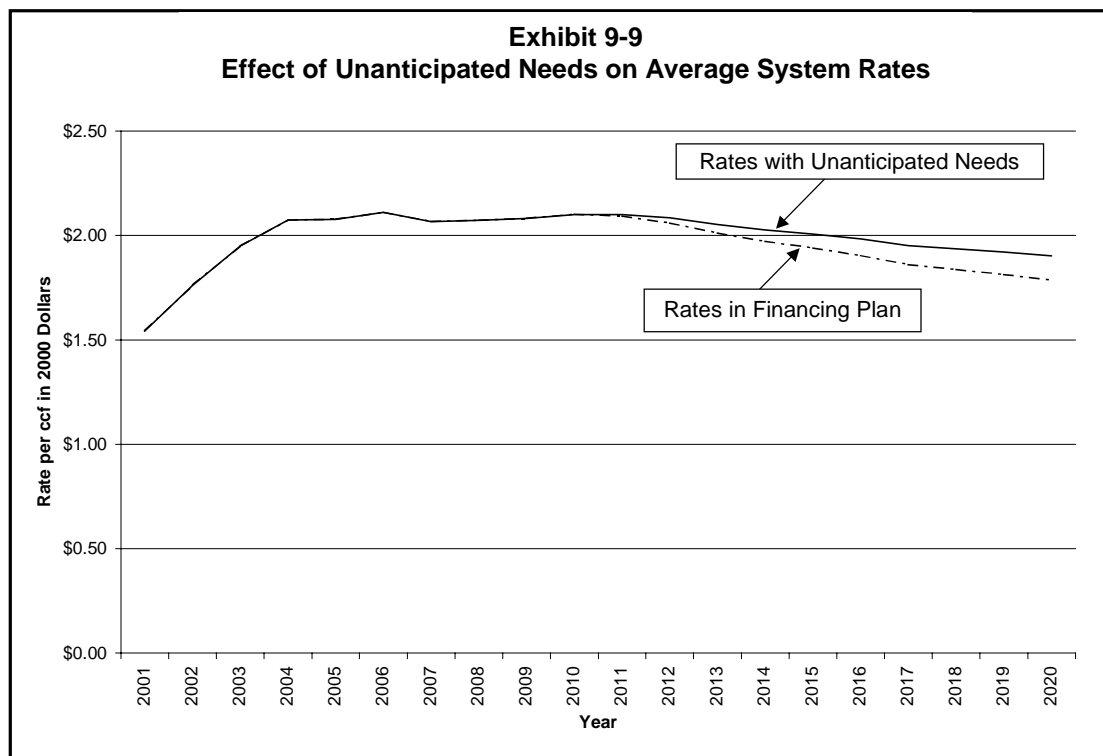
9.5.5 Alternative Financing Paths

A lower debt-to-assets ratio could be achieved by higher rate increases in the near-term, coupled with deferral of part of the capital program. This would allow a greater portion of the capital program to be equity financed over time. However, it would also result in higher near-term rates, and deferring projects could prevent the water system from complying with regulatory agreements made with State and federal agencies. The proposed approach strikes a balance between short-term and long-term financing approaches, minimizing, or providing stable rates over time, and addressing important capital and operating requirements.

9.5.6 Potential Financial Effects of Unanticipated Needs

Even with thoughtful consideration, it is often impossible to anticipate needs 20 years into the future. Future regulatory requirements or unexpected circumstances could require investments in addition to those considered in the CFP. Retaining the financial flexibility to meet such unanticipated needs is an important part of planning for the future.

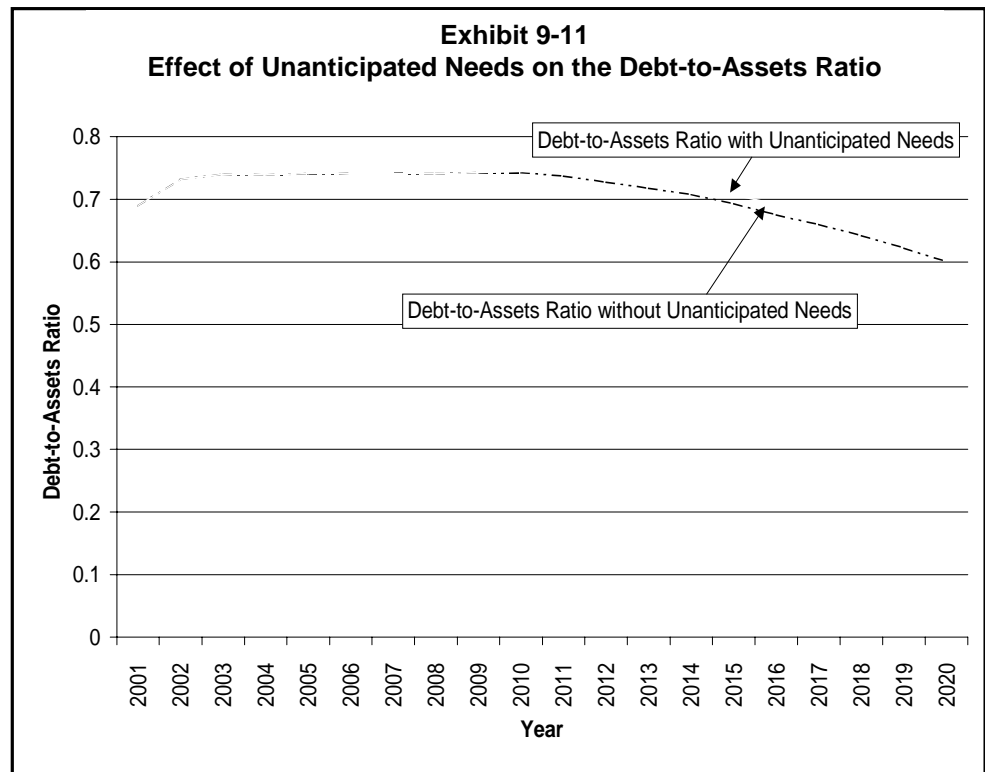
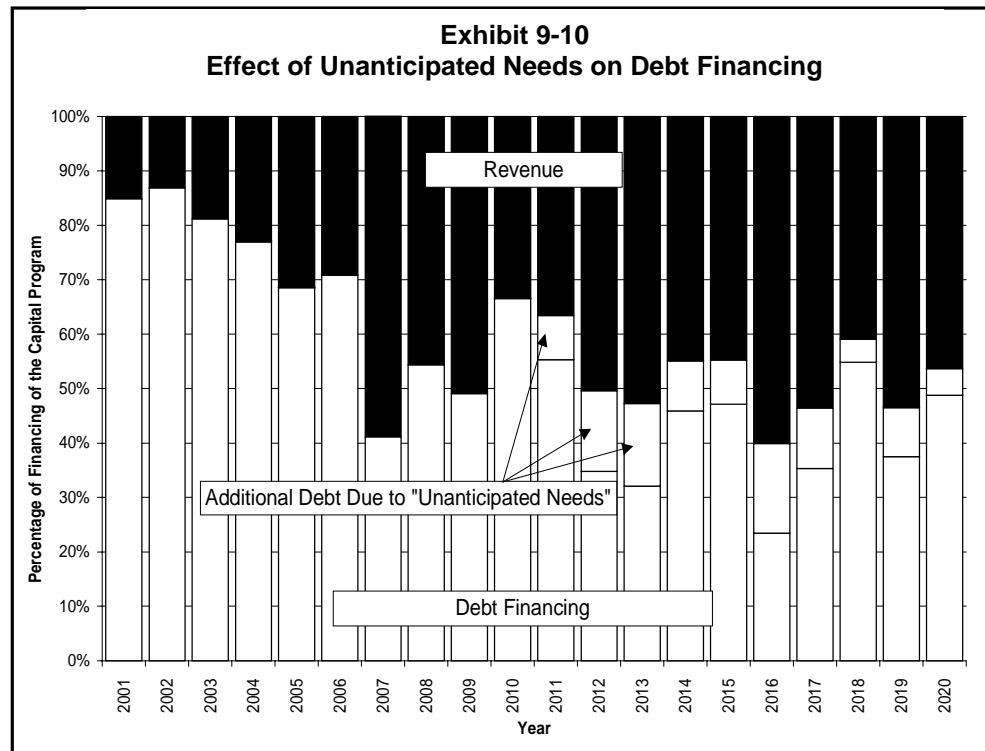
In order to judge the capacity of the water system to meet major unanticipated needs, a “what if” scenario was created. This scenario assumes that \$10 million (in 2000 Dollars) in additional capital spending would be required each year starting in 2011. Exhibit 9-9 shows the rate path required under this scenario.



The unanticipated needs would cause rates to decrease more slowly after 2010, in real terms, than they would have without the unanticipated needs. Most of the additional capital spending for the unanticipated needs would be financed by debt, as shown in Exhibit 9-10.

“Unanticipated needs” have an insignificant effect on the debt-to-assets ratio.

As a result of the unanticipated needs in this scenario, debt would be used to fund about ten percent more of the Capital Program from 2011-2020. This additional reliance on debt financing would cause a small increase in the debt-to-assets ratio (Exhibit 9-11).



The slight increase in the debt-to-assets ratio is insignificant, since the ratio is relatively high even without considering the unplanned needs scenario.

9.6 Conclusion

SPU rates are expected to increase by an average of 8% per year between 2001 and 2005.

The system is in a period of unprecedented capital expenditures not required since the system was originally constructed. SPU is building significant new facilities to protect public health, comply with federal and State regulations; provide a new source of water supply, and replace aging infrastructure. In order to pay for the facilities, the financial capacity of the water system must be enlarged. This is expected to cause rate increases in 2001-2005 of approximately 8% per year. In order to balance the need for infrastructure with the need to maintain stable rates, the financing plan calls for financial margins lower than policy targets during these years. For the 15 years after 2005, rates should more-or-less follow the rate of inflation. Financial performance will improve appreciably as the level of capital expenditures declines after 2005.